

## New species of *Lagarolampis* Descamps (Orthoptera, Caelifera, Acridoidea, Romaleidae, Bactrophorinae) from Central America.

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The new species *Lagarolampis maculata* and *L. cararensis* are described from Costa Rica, and *L. gamboensis* from Central Panama. *L. maculata* represents the most northerly known occurrence of this genus, previously recorded only from Colombia, Ecuador and the Amazon basin.

**Key-words:** Orthoptera - Acridoidea - Romaleidae - Ophthalmolampini - taxonomy - Neotropics.

### INTRODUCTION

The Bactrophorinae are a distinctive group of Neotropical grasshoppers, almost entirely confined to forest environments. AMÉDÉGNATO (1974) gave them subfamily rank (originally under the name Trybliophorinae, but the original type genus *Trybliophorus* later transpired to be a romaleine) and grouped them with the Romaleinae as the family Romaleidae. This allotment of the Bactrophorinae is made primarily on the basis of their ♂ genitalia, which AMÉDÉGNATO (1977) interprets as being an early version of the form characteristic of the rest of the Romaleidae; in this work and elsewhere (e.g. AMÉDÉGNATO & DESCAMPS 1983) she also considers them the most archaic of all the Cryptosacci. (Molecular systematic studies (Flook and Rowell, *unpubl. obs.*) confirm that the Bactrophorinae are an early lineage within the Acridoidea, but do not provide any evidence that they are in the same clade as the Romaleinae. However, the ribosomal sequences used to date do not clearly resolve the branching order of clades within the Acridoidea, so the hypothesis of a near relationship to the Romaleinae cannot be considered disproven).

Bactrophorines are of small to medium size, usually brachypterous or micropterous, with powerful jumping hind legs, large globular protruding eyes, long antennae and a long second tarsal joint in the back foot. The feet and the lower surfaces of the abdomen are richly provided with sensory hairs. Many are brightly coloured, and they probably rely on visual intraspecific communication. They have no stridulatory apparatus and often no tympanum. Most of them are arboreal and rather rarely captured; at ground level they are most often found after wind storms or tree felling, or in the case of ♀ after oviposition. Little is known so far of their food plant preferences (but see AMÉDÉGNATO 1997), and virtually nothing of their sexual behaviour. Currently some 40 genera are described, with more in preparation.

AMÉDÉGNATO (1977) divided the subfamily into three tribes, the Bactrophorini, Taeniophorini and Ophthalmolampini, and the last of these into 4 subtribes. This division was accepted by DESCAMPS (1978, 1983) in his reviews of the latter two tribes. The taxa treated in the present article all belong to the subtribe Lagarolampae of the Ophthalmolampini, in to which DESCAMPS (1983) placed 8 genera. The members of this subtribe are micropterous and atympanate, and the valves of the ovipositor are of the usual acridoid form, suggesting that the eggs are laid in the ground, as indeed is known to be the case in the genus *Zoumolampis* (pers. obs.). In the other subtribes the valves are more or less modified and rod-like, suggesting epiphytic oviposition.

No member of the Lagarolampae has been recorded previously north of Colombia, other than *Zoumolampis bradleyi* and an undescribed species which probably also belongs to that genus, but of which only the ♀ is known to date. In this paper I describe two new species of *Lagarolampis* from Costa Rica and a third one from Panama. Additionally, drawings and measurements are given for *L. amazonica*, the type of the genus, which has not previously been figured.

#### KEY TO SPECIES OF *Lagarolampis*:

- 1 Pronotum green . . . . . 2
- Pronotum black or dark brown, marked with white bands or a variable number of white spots . . . . . 3
- 2 Pronotum with a medial purple stripe and purple ventral margins and two or more pairs of white spots. Elytron purple, with white dorsal and ventral border, in ♀ extending almost to posterior edge of metanotum, in ♂ shorter (Panama) . . . . . *L. gamboensis* sp. n.
- Pronotum monochrome (♂) or marked with white spots (♀). Head black with yellow markings, antennae orange ringed with brown. (Colombia) . . . . . *L. versicolor* Descamps, 1978
- 3 Antennae mainly black or dark brown . . . . . 4
- Antennae mainly red . . . . . 5
- 4 Meso- and metathoracic terga and pleura black or dark brown with white spots. Hind tibiae green proximally, black or dark blue distally. Smaller than *cordobae* (F ♀ <10.5 mm) (Amazonian Colombia, Peru, Ecuador, Brazil) . . . . . *L. amazonica* Descamps, 1978
- Meso- and metathoracic terga and pleura green. Hind tibiae green, darker distally. Larger than *amazonica* (F ♀ >11.0 mm; ♂ unknown) (Colombia) . . . . . *L. cordobae* Descamps, 1978
5. Pronotum, meso- and metanota, and all thoracic epimera and episterna black or dark brown, marked with discrete white spots. Elytron blackish brown with white dorsal and ventral border, extending only halfway across metanotum, similar in both sexes. ♂ antennae with black tip (Costa Rica) . . . . . *L. maculata* sp. n.
- Meso- and metanota and all thoracic epimera and episterna green, neither black nor ornamented with white spots. Pronotum black; white

spots on lateral lobe confluent, forming a continuous band. Elytron green, in ♂ minute and barely visible, in ♀ extending to posterior edge of metanotum. ♂ antenna with white tip (Costa Rica). . . . *L. cararensis* sp. n.

### **Lagarolampis** Descamps

DESCAMPS 1978: 386

DESCAMPS 1983: 18, 22, 25

*Lagarolampis* was created by DESCAMPS (1978) to contain 3 new species from Colombia (*L. amazonica*, the type of the genus, *L. versicolor* and *L. cordobae*); *L. amazonica* has subsequently been reported from Peru and Brazil (Descamps 1983) and from Ecuador (K. Riede, *pers. comm.*; C. Amédégnato, *pers. comm.*) as well. These three species are very similar. They differ principally in coloration, especially in the extent of the dark pigment on the thorax and anterior abdomen and the number and placement of pale spots on the head and thorax. These characters however appear variable within the species (DESCAMPS 1978, 1983) and even between the left and right sides of the same individual (see below). There are also small differences in size. The ♂ internal genitalia are very similar in all species examined to date. The adult ♂ of *L. cordobae* is unknown; a late instar ♂ larva in the Paris collection has the same coloration as the ♀ adult (C. Amédégnato, *pers. comm.*).

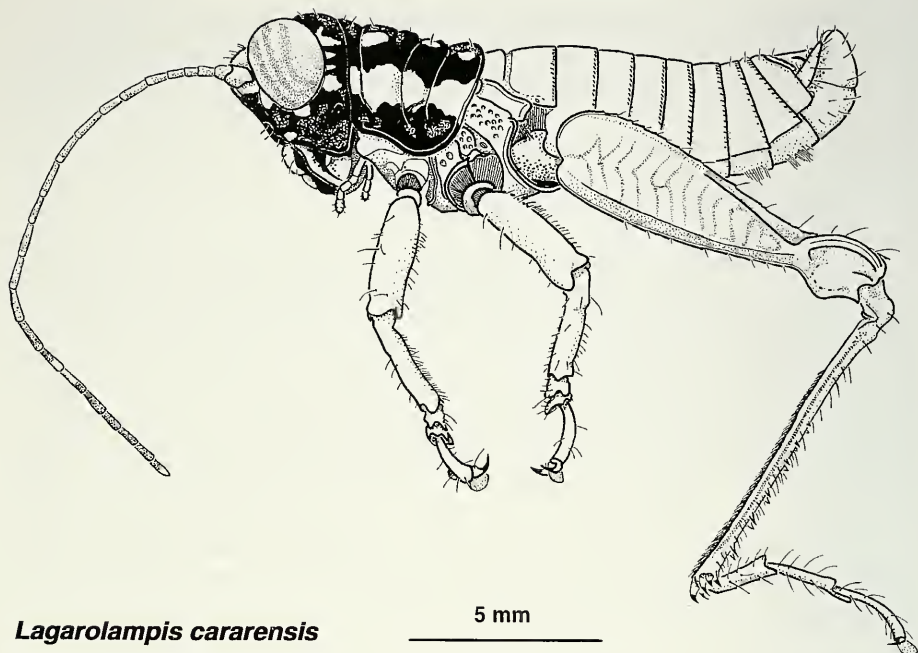
#### COMMENTS ON DEFINITION OF THE GENUS *Lagarolampis*

In light of the new material and of a ♂ of *L. amazonica* from Ecuador (kindly loaned by Dr. K. Riede) the original definition of the genus must be amended slightly. The dorsal carina of the hind femur is not perfectly smooth, but minutely toothed, with a hair arising at the base of each tooth. The elytra can extend as far as the boundary between the metathoracic and first abdominal tergites. The dorsal outer edge of the upper ovipositor valve can be more serrated (see e.g. Fig. 6 ) than suggested by the original description ("jamais dentées ... bords saillants et plus ou moins ondulés").

### **Lagarolampis cararensis** sp. n.

MATERIAL EXAMINED: Holotype ♂, allotype ♀. COSTA RICA: Prov. Puntarenas: Reserva Biológica Carara: Estación Quebrada Bonita. 50 m. Lambert North N195200 E469400. In copulation on underside of leaf of sapling in moderately shady understorey, primary lowland forest, Aug 2, 1991 (Rowell CHF & Elsner N). Specimen no.s RC 91250, 91251. (Academy of Natural Sciences, Philadelphia).

♂ *holotype* (Fig. 1). Head and pronotum black, spotted with yellowish white as detailed below. Antennae salmon red, each segmental joint preceded by a narrow pale ring; a single broad white band on flagellar segments 15 and 16, then distally suffused with dark pigment, the final (21st) segment white (antennae black with light rings in the South American species (DESCAMPS 1978) and uniformly brown in the Roraima race of *L. amazonica* (DESCAMPS 1983)). Hind knees red, tarsal spines black. Remainder of body clear emerald green.

***Lagarolampis cararensis***

5 mm

FIG. 1

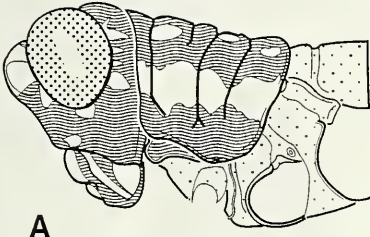
*Lagarolampis cararensis* ♂ holotype, habitus.

Distribution of white spots as in Fig. 2A & 3A, as follows. Head: fastigium and area surrounding base of antenna pale, 6-8 small spots around rim of eye, one at lower external angle of the gena, 2 on ventral margin of gena, one pair on the clypeus, 2 on each mandible. Vertex with irregular and rather assymmetric yellow markings. Palps pale. Thorax: 3 pairs of discrete white spots on disc of pronotum, situated behind the 1st, 3rd and 4th sulci respectively, plus 4 pairs on the lateral lobe of the pronotum, confluent, forming a continuous but unevenly wide stripe.

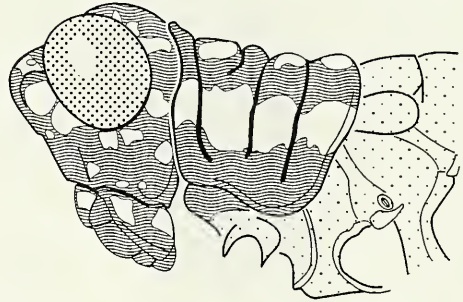
Micropterous, elytra barely visible at edge of pronotum. Hind femur with 7 external and 7 internal spines. Cerci, sclerotisations of posterior margin of 10th abdominal tergite and supraanal and subgenital plates (Fig. 4A & B) practically identical to those of *L. versicolor* (DESCAMPS 1978: Fig. 16-18). Dimensions as in Table 1.

Internal genitalia (Fig. 5F-J) of type typical for genus. Epiphallus a simple, strap-like bridge with rudimentary ancorae, lateral plates triangular and relatively large; lophi terminally sclerotised, with a minute, outwardly and anteriorly directed hook at tip. Ventrolateral sclerites large, wrapping around posterior ventral part of ectophallus, indistinctly sclerotised. Cingulum simple and small, weakly sclerotized, cingular apodemes absent. Endophallus strongly sclerotised, with large, laterally compressed apodemes.

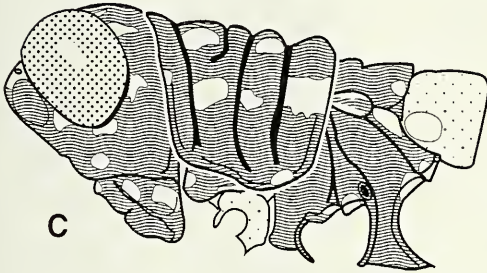
*Lagarolampis cararensis*



A

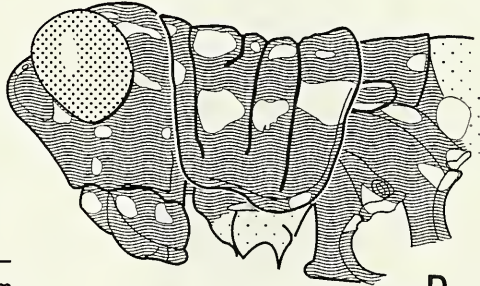


B



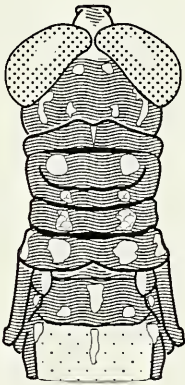
C

*Lagarolampis maculata*



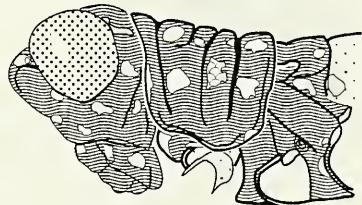
D

F



1 mm

*Lagarolampis amazonica* (male)



E

FIG. 2

Colour patterning of black-and-white species. A & B, *L. cararensis*, ♂ and ♀; C & D, *L. maculata*, ♂ and ♀; E & F, *L. amazonica*, ♂ only. Key: Wavy lines, black: no pattern, white; heavy stippling, light gray; light stippling, green.

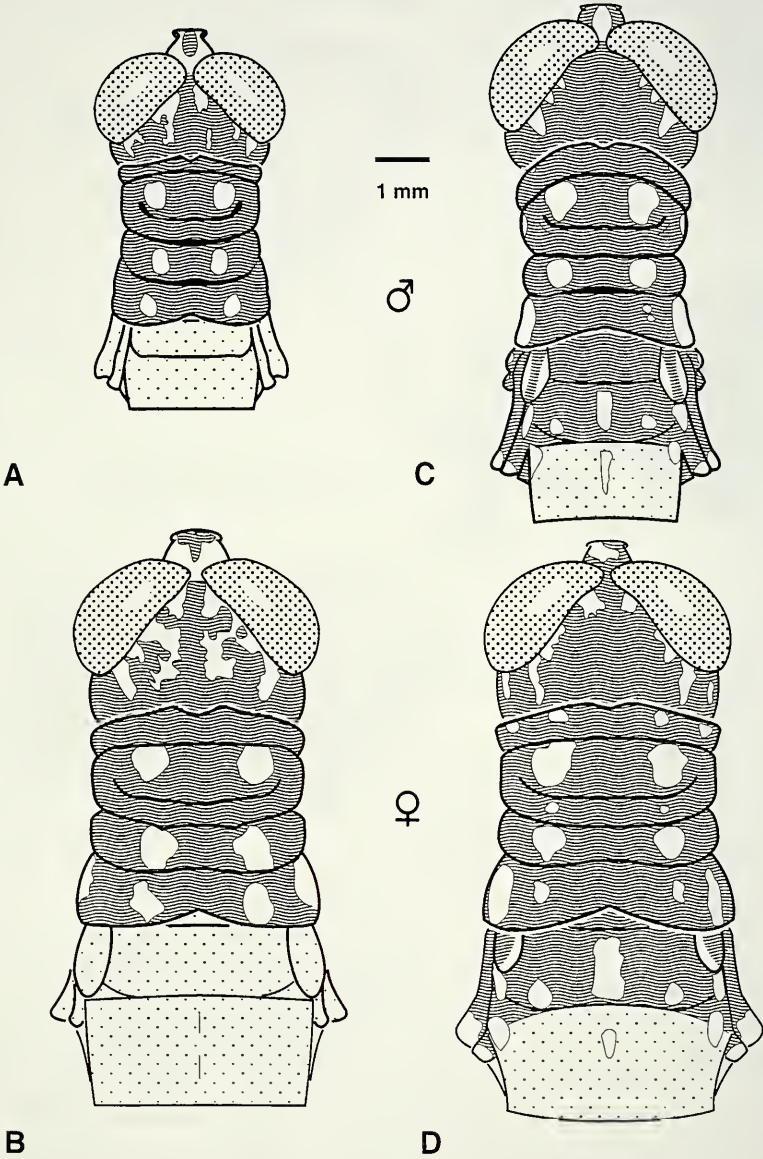
*Lagarolampis cararensis**Lagarolampis maculata*

FIG. 3

Colour patterning of black-and-white species, dorsal view. A & B, *L. cararensis*, ♂ and ♀. C & D, *L. maculata*, ♂ and ♀. Conventions as in Fig. 6.

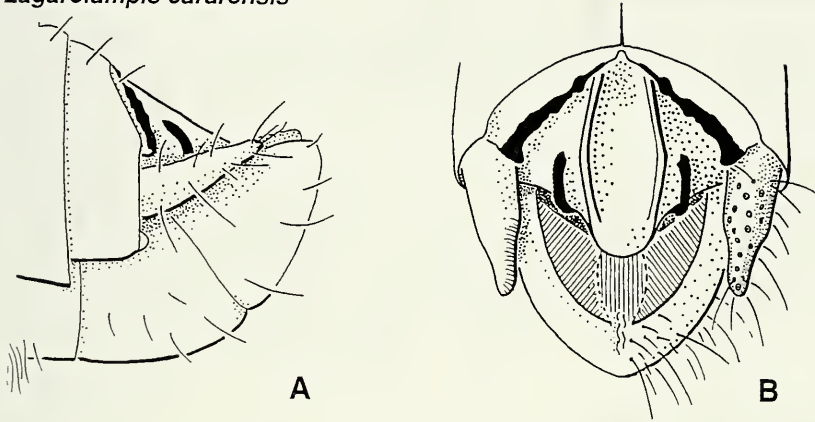
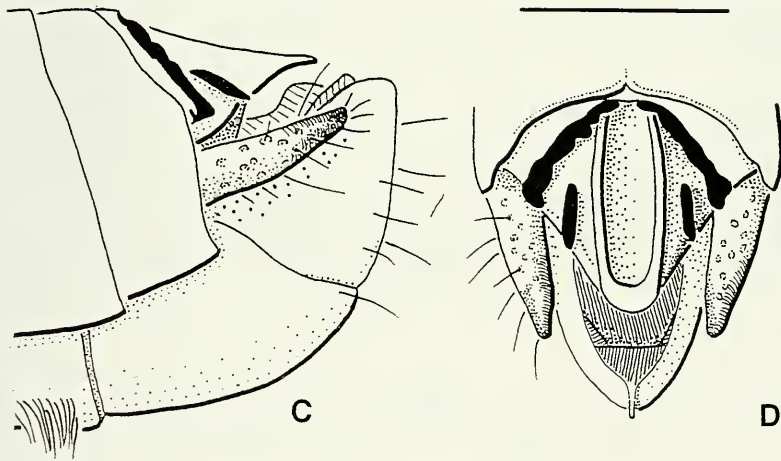
*Lagarolampis cararensis**Lagarolampis gamboensis*

FIG. 4

Tip of abdomen of ♂ *L. cararensis*: A, lateral view; B, dorsal view. *L. gamboensis*: C, lateral view; D, dorsal view. Scale, 1 mm.

♀ *allotype*. Coloration as ♂, except for an additional pair of small pale spots at anterior dorsolateral edge of pronotum (Figs. 2B, 3B). The antennae lack the dark distal portion of the ♂ but have more numerous white bands.

Micropterous, but elytra much larger than in ♂ (or than in ♀ of other species of the genus), extending to posterior border of metathoracic tergite. Elytron green, not bordered in lighter colour as in the ♀ of *L. maculata*.

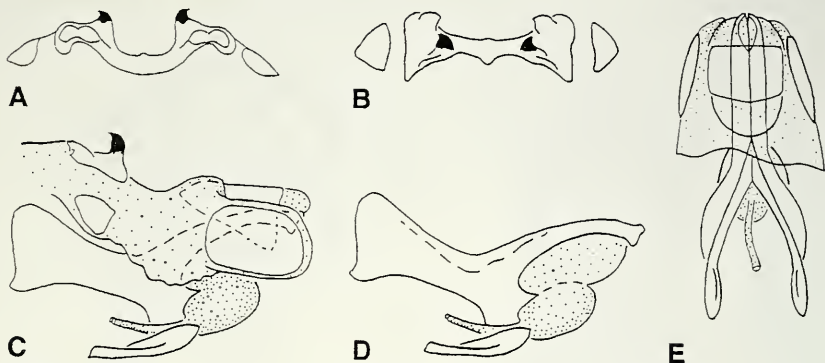
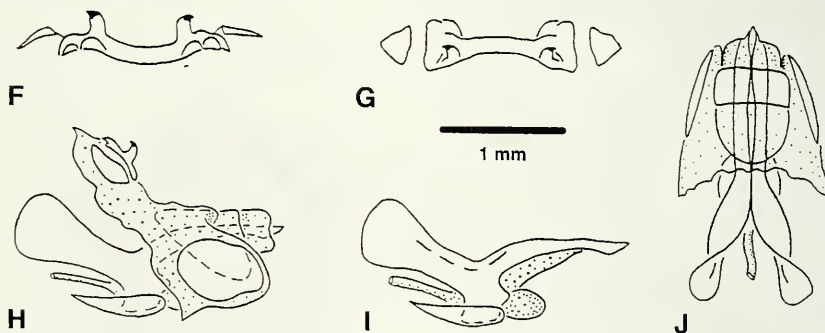
*Lagarolampis amazonica**Lagarolampis cararensis*

Fig. 5

♂ internal genitalia. A-E, *L. amazonica*. F-J, *L. cararensis*. Scale, 1 mm.

Ovipositor valves (Fig. 6A-C) as described for genus (DECAMPS 1978: 386) and closely similar to those figured for *L. versicolor* (DESCAMPS 1978: Fig. 18-19). Posterior extremity of subgenital plate developed into a long triangular "egg-guide" lying medially between the ovipositor valves.

## COMMENT

The differences in coloration alone would probably not warrant distinguishing *L. cararensis* from the rest of the genus. The considerably larger elytra of the ♀ however indicate specific rank; the sexual dimorphism in this character is quite striking in this species. The dorsal ovipositor valves are also shorter and less toothed than those of the other species here described (see Fig. 6).



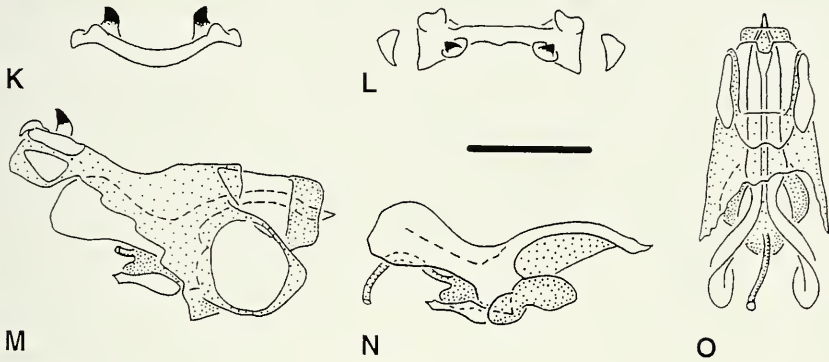
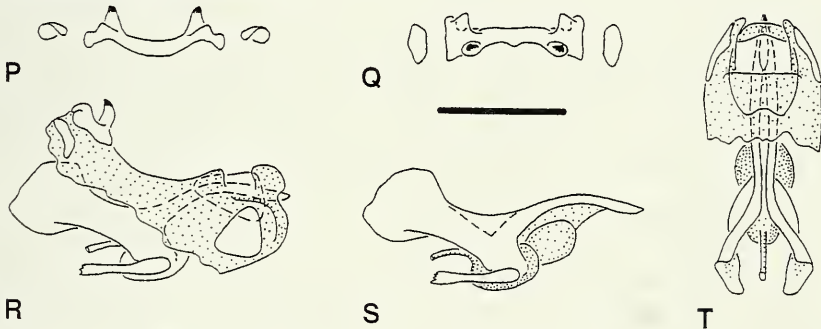
*Lagarolampis maculata**Lagarolampis gamboensis*

FIG. 5

contd. K-O, *L. maculata*. P-T, *L. gamboensis*. Scales, 1 mm.

***Lagarolampis maculata* n. sp.**

**MATERIAL EXAMINED:** Holotype ♂. COSTA RICA: Guanacaste Prov.: R. Naranjo, 3 km SE thereof, Hacienda Montezuma, 500 m. Lambert North N293000 E417000, 14 Nov 1991 (Parker FD), originally deposited at Biology Museum, Utah State University at Logan, USA. Specimen number RC 96039 (Academy of Natural Sciences, Philadelphia). Allotype ♀. Same data as holotype, but 25 Nov 1991 and specimen number RC 94038. Paratype ♀. Limón Prov.: Margarita, 9.4 km beyond Bribri on rd. to Sixaola, trail up Fila Margarita, on sapling, 80-205 m. Lambert South N395500 E598500, 4 Jul 1980 (Rowell CHF), specimen number RC 80183 (Academy of Natural Sciences, Philadelphia). Paratype ♀. Limón Prov.: 7 km N. of Suretka, 230 m; Lambert South N395450 E583780, 21 Sep 1983 (Rowell CHF), specimen no. RC 83450 (Academy of Natural Sciences, Philadelphia). Paratype ♂. Limón Prov.: Cerro Uatsi, above Bribri, 600 m. Lambert South N396900 E579600, 23. Aug 1997 (Rowell CHF & Singh I), specimen no. RC 97187 (Academy of Natural Sciences, Philadelphia).

♂ *holotype*. Head, pronotum and all of thorax black, spotted with whitish yellow as detailed below. Antennae red, with rings of blackish pigment on flagellar segments 7-9, 12-14, and 17-21. The distal (21st) segment has no white tip (cf. *L. cararensis* above). Palps green. Hind knees red, tarsal spines black. Abdomen and legs green.

Distribution of white spots as in Fig. 2C & 3C, as follows. Head: similar to *L. cararensis*. Thorax: 2-3 pairs of white spots on disc of pronotum, situated behind the 1st, 3rd and 4th sulci respectively; in the holotype (but not the paratype) the most posterior pair is small on the right side and absent on the left side. In the paratype there is a fourth pair of spots on the anterior margin of the pronotum, absent in the type. Four pairs of discrete white spots on the lateral lobe of the pronotum, not forming a continuous stripe as in *cararensis*, plus a single white spot on the posterior ventral margin. Metanotum with one central and two pairs of lateral white spots. White marks at ventral margin of pro-, meso- and metathoracic epimera and episterna. A single medial white spot on the first abdominal tergite, and a pair of spots at the anterior lateral margins, just above the metathoracic epimera.

Micropterous, elytra extending halfway across the metanotum in the type, even shorter in the paratype. Elytra brown, with whitish dorsal and ventral margins. Genitalia, both external and internal (Fig. 5K-O), similar to other species of the genus. In the holotype the epiphallus cannot be seen, the rest of the internal genitalia are well defined. The drawings of the epiphallus are made from the paratype ♂. Dimensions as in Table 1. The ♂ of *L. maculata* is almost as large as the ♀. In the other species of the genus sexual dimorphism is much more pronounced.

♀ allotype. Differs from ♂ as follows:

- i. Antennae red, darkening to blackish distally, with 4 diffuse white rings, these not coinciding with segmental boundaries.
- ii. An additional white spot close to the posterior edge of the gena; on disc of pronotum, an additional small spot anterior to the 1st sulcus, and another between sulcus 2 & 3, making a row of 5 pairs of spots dorsally (Figs. 2D, 3D).

Dorsal ovipositor valves longer and more prominently toothed than in *L. cararensis* (Fig. 6).

In life the insects are vividly coloured in black, white, emerald green and red. The eyes are light gray mottled with black. The brownish tints of the head and pronotum and the yellow tints of the eyes and of the spots and markings seen in pinned specimens are artifacts of preservation.

#### COMMENT

All known localities (Fig. 7) are in lowland wet forest on or adjacent to the Caribbean slope between 100 and 600 m asl, but at opposite ends of the country, suggesting that the species may occur in intermediate localities too (though at low density, because not so far collected). Specimen 4 was one of a tight group of 6-8 individuals found feeding voraciously on the leaves of the tree *Cordia alliodora* (Boraginaceae).

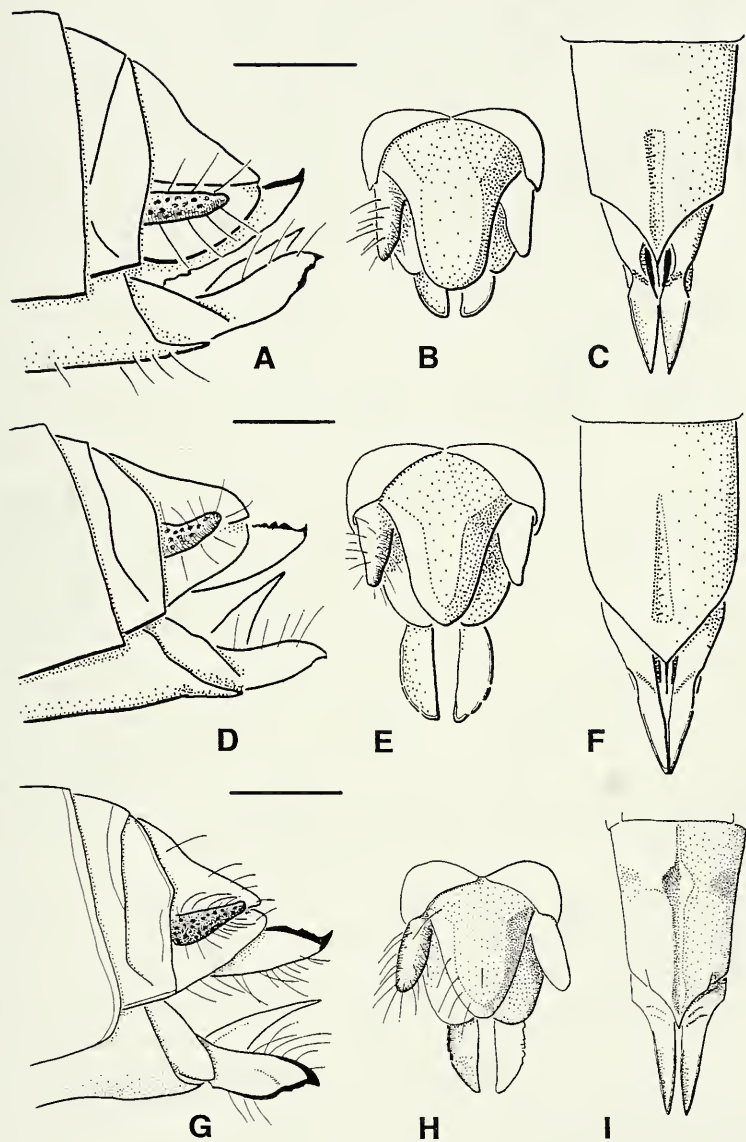


FIG. 6

Tip of abdomen of ♀. A-C, *L. cararensis*; D-F, *L. maculata*; G-I, *L. gamboensis*. Scale, 1 mm.



FIG. 7  
*L. cararensis* and *L. maculata*, distribution map.

***Lagarolampis gamboensis* sp. n.**

MATERIAL EXAMINED: Holotype ♂. PANAMA: Canal Zone: Chico: 24-28 June 1933 (Greenhall A) (University of Michigan Museum of Zoology.) This locality is ambiguous: there are two possibilities, but both lie close to one another in the modern Provincia de Panamá: the Río Chico, 9°09' N, 79°44' W, and the community Chico, 9°16' N, 79°31' W. Allotype ♀. Prov. Colón: Gamboa: Pipeline Rd., 100-200 m asl., forest edge, on *Byttneria* (Sterculiaceae), 15 September 1997 (Rowell CHF, Bentos A). (Academy of Natural Sciences, Philadelphia).

♂ *holotype* (Fig. 8). Head. Antennal flagella broken short, apparently black. Eyes greenish brown (an artifact of preservation, see ♀ below), with 3 darker vertical bands at anterior margin. Head purple-brown, with numerous white marks on frons, around the eyes and on the mouthparts. Interocular space, posterior lateral margins of fastigium and lateral margins of frontal ridge, white.

Ground colour of remainder of animal, green.

Thorax. Medial purple stripe on pronotum, fading out posterior to 3rd sulcus. At least one pair of dorsolateral white spots touching edges of medial stripe, anterior to 1st sulcus; the specimen is faded and the white spots on thorax and abdomen difficult to see, their original pattern was probably the same as described for the ♀ below. Ventral margins of lateral lobes banded broadly with purple, posterior ventral angle touched with white. Elytron minute, not reaching the centre of the metathoracic notum, purple, edged with white. All legs green, hind knees reddish brown edged with black, tibial spines and spurs and tarsal claws green tipped with black. Front feet missing. External genitalia (Fig. 4C-D) green, decorated with black sclerotized areas, cerci blackish at tip. Internal genitalia (Fig. 5P-T) of type typical of genus.

♀ allotype (Fig. 8). Similar to ♂, with following differences. Basal segment of antenna green, remainder black, with 6 white bands and white tips. Eyes with 4 black bands at anterior margin, widening towards the centre of the eye. Coloration of head as in ♂, plus single medial white spot dorsal to medial ocellus.

Ground colour of remainder of animal, green.

Thorax. 3 pairs of white spots on either side of the medial pronotal stripe: i) small, at anterior margin; ii) large, anterior to first sulcus; iii) small, between sulci 2 and 3. Four more pairs of white dots immediately above the ventral marginal band of the lateral lobes, lying between, anterior to, and behind the three sulci. White mark at posterior angle of lateral lobe. Prothoracic epimeron edged in white. White spot on mesothoracic episternum. Mesothoracic episternum and epimeron tinged purple-brown. Elytra purple-brown, bordered white, relatively larger than in ♂, almost reaching posterior edge of metanotum.

Abdomen. White spot on first abdominal tergite, just behind tip of elytron. Abdomen with narrow medial white stripe. Cerci and ovipositor valves (Fig. 6 G-I) green, tinged red brown. Upper part of hind knees red brown, posterior edge of knee edged dark green. Tibia green, tibial spines blackish brown. Lateral and ventral surfaces of hind tarsi, red brown.

In life the ♀ was bright green and purple, with white marks and conspicuous pale blue-gray eyes. Fading, especially of the eyes, occurs rapidly after death and preparation. The ♀ contained 4 large ripe eggs, more or less filling the body cavity (see also Descamps 1983: 21; this very small number of ovarioles is typical for group). Gut very small.

Dimensions and ratios are given in Table 1. All lie within the range set by other members of the genus.

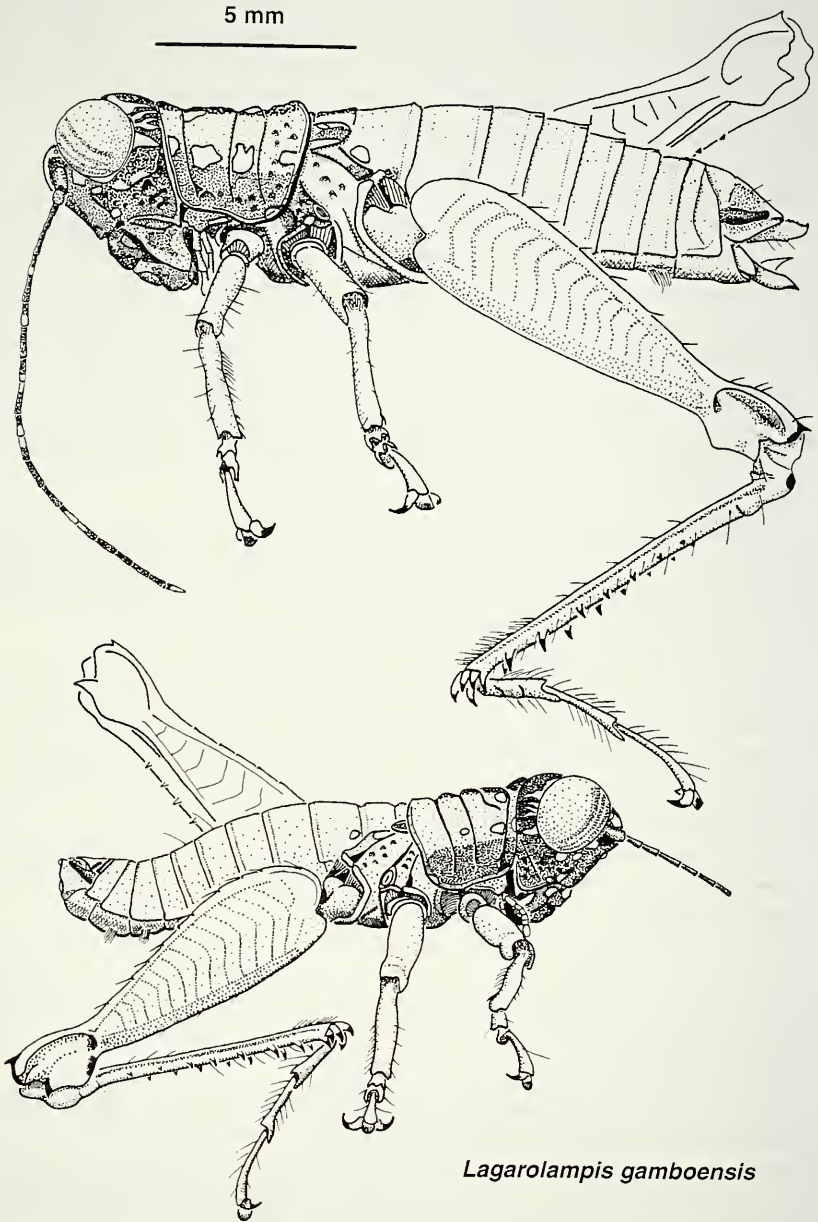


FIG. 8  
*Lagarolampis gamboensis*. ♂ holotype, ♀ allotype, habitus.

## DISCUSSION

*L. maculata* is similar to *L. cordobae* Descamps, 1978 from Colombia in both dimensions and coloration. Comparison is made more difficult by the absence of an adult Colombian ♂, but the morphological differences between the two appear to justify separate status. Although many flightless forest taxa of the Neotropics are very restricted in range, there are some (e.g. *Zoumolampis bradleyi*, also a member of the Lagarolampae, or *Pseudanniceris nigrinervis*, Ommatolampinae) of wide distribution, so the geographical distance between Costa Rica and Colombia is not alone an argument for species status. However, these other taxa are probably a continuous population (or at least were, prior to recent deforestation), whereas no linking *Lagarolampis* species is known from Panama (*L. gamboensis* is quite different in coloration). The ♀ *Lagarolampis maculata* shows numerous small differences in coloration relative to the *Lagarolampis cordobae* holotype, the most significant being the red colour of the antennae and the black pigment on the meso- and metathorax. Differences in the pattern of white spots, in contrast, are probably of no significance. DESCAMPS (1978) noted that the holotype and paratype ♀♀ of *L. cordobae*, from different parts of Colombia, differed in their pattern of spots. Similarly, the type material of *L. amazonica* has only 2 pairs of spots on the disc of the pronotum (DESCAMPS 1978), but the Ecuadorian specimen examined has 4 pairs, while otherwise agreeing exactly with the type description. Within the Costa Rican material of *L. maculata* there appears to be a small difference between the northern and the southern specimens. The latter are slightly smaller and have more numerous white spots on the pronotum, and the elytron of the ♂ is relatively smaller.

The Panamanian *L. gamboensis* is of a different coloration to all other members of the genus, but it appears to have no morphological characters which might justify a separate genus.

Apart from the observed feeding of *L. maculata* on *Cordia alliodora* (Boraginaceae) no host plants of the genus are known. AMÉDÉGNATO (1997) lists *L. amazonica* as being polyphagous on tree foliage, but gives no further details. Species of *Lagarolampis* are typically found on shrubs and trees of the forest understorey (DESCAMPS 1976: 373; pers. obs.), often at forest edges or in successional forest. To date they have not been found in insecticide catches from the canopy in the Caribbean forests of Costa Rica (pers. obs.), DESCAMPS (1976) does not include them in his list of species from the crowns of Amazonian trees, and AMÉDÉGNATO (1997) lists *L. amazonica* as being found in the "intrac canopy", which all together may indicate that the understorey is their normal habitat. If this is the case, they are rare (see also Amédégnato, loc. cit.). Suitable habitat for the genus however exists on the Caribbean slope of Central America far to the north of Costa Rica, and *L. maculata* or a related form may well extend as far as Belize.

## ACKNOWLEDGEMENTS

I thank the Drs. C. Amédégnato (Paris), W. Hanon (Logan, Utah), M. O'Brien (Ann Arbor, Michigan) and K. Riede (Bonn) for permission to examine specimens from

TABLE 1A. Dimensions of *Lagarolampis* spp.

Dimensions in millimetres:		<i>Lagarolampis amazonica</i>				<i>Lagarolampis versicolor</i>	<i>Lagarolampis cordobae</i>
MALES							
Provenance		Peru	Ecuador	Ecuador		Colombia	
Type status		Holotype				Holotype	
Specimen no.		Paris coll.	96010	Paris coll.	MEAN	(Paris coll.)	No males known
Hind femur		8.65	8.63	8.70	8.67	10.09	
Rostrum-subgen. plate			13.06	13.38	13.22	15.39	
Pronotum (midline)			2.57	2.43	2.50	3.06	
Pronotum longest		2.75	2.80	3.09	2.95	3.24	
Interocular space			0.10	0.09	0.10	0.1	
Antennal pedicel (width)			0.41	0.42	0.42	0.5	
Antenna			13.00	>11	13.00	14.1	
T3 tarsus 1 + 2			2.61	2.80	2.71	3.27	
T3 tarsus 3			1.88	1.77	1.83	2.37	
Elytron length			0.46	0.28	0.37	0.44	
Ratios							
Femur/Pronotum		3.15	3.08	2.82	2.95	3.11	
L/P			4.66	4.33	4.50	4.75	
Interoc./P			0.04	0.03	0.03	0.03	
Interocular/pedicel			0.24	0.21	0.23	0.20	
Tarsus 3/ 1+2			0.72	0.63	0.68	0.72	
Tarsus 1+2+3/F			2.83	3.00	2.92	3.50	
Tarsus 1+2+3/P			2.81	2.68	2.74	3.38	
Ant/P			4.64		4.64	4.35	
Elytron/Pronotum			0.18	0.12	0.15	0.14	
FEMALES							
Type status		Allotype		Paris coll.		Paratype	Holotype
Specimen no.					Paris coll.	Paris coll.	Paris coll.
Hind femur		10.05		9.98	12.56	12.74	11.62
Rostrum-subgen. plate				17.37	19.87	21.67	22
Pronotum (midline)				2.90	3.4	3.9	3.4
Pronotum longest		3.05		3.35	4.08	4.43	4.27
Interocular space				0.16	0.23	0.15	0.18
Antennal pedicel (width)				0.50	0.51	0.62	0.55
Antenna				>10	16.58		12.31
T3 tarsus 1 + 2				3.18	3.81	4.12	3.72
T3 tarsus 3				2.21	2.7	2.57	2.19
Elytron length				0.85	0.81	1.07	>0.8
Ratios							
Femur/Pronotum		3.30		2.98	3.08	2.88	2.72
Length/Pronotum				5.19	4.87	4.89	5.15
Interoc./Pronotum				0.05	0.06	0.03	0.04
Interocular/pedicel				0.32	0.45	0.24	0.33
Tarsus 3/ 1+2				0.69	0.71	0.62	0.59
Tarsus 1+2+3/F				3.40	4.02	4.32	3.91
Tarsus 1+2+3/P				3.16	3.63	3.50	3.06
Ant/P					4.06		2.88
Elytron/Pronotum				0.29	0.24	0.27	0.29

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TABLE 1B. Dimensions of *Lagarolampis* spp.

## Dimensions in millimetres:

		<i>Lagarolampis maculata</i> n.sp.			<i>Lagarolampis cararensis</i> n.sp.	<i>Lagarolampis gamboensis</i> n.sp.
<b>MALES</b>						
	Type status	Holotype	Paratype	MEAN	Holotype	Holotype
	Specimen no.	<b>96039</b>	<b>97187</b>		<b>91250</b>	(UMMZ coll.)
Hind femur		10.14	9.35	9.75	8.82	9.11
Rostrum-subgen. plate		16.27	15.59	15.93	13.32	15.1
Pronotum (midline)		3.20	2.91	3.06	2.76	2.73
Pronotum longest		3.46	3.31	3.39	3.26	3.11
Interocular space		0.13	0.10	0.12	0.13	0.06
Antennal pedicel (width)		0.53	0.55	0.54	0.45	0.4
Antenna		13.96	11.96	12.96	11.30	
T3 tarsus 1 + 2		3.21	3.01	3.11	3.03	2.85
T3 tarsus 3		2.36	2.08	2.22	1.77	1.97
Elytron length		0.88	* >0.43	<0.88	* <1.0	0.63
<b>Ratios</b>						
Femur/Pronotum		2.93	2.82	2.88	2.71	2.93
L/P		4.70	4.71	4.71	4.09	4.86
Interoc./P		0.04	0.03	0.03	0.04	0.02
Interocular/pedicel		0.25	0.18	0.21	0.29	0.15
Tarsus 3/ 1+2		0.74	0.69	0.71	0.58	0.69
Tarsus 1+2+3/F		3.44	3.23	3.34	3.23	3.07
Tarsus 1+2+3/P		3.29	2.99	3.14	2.70	2.89
Ant/P		4.03	3.61	3.83	3.47	0.00
Elytron/Pronotum		0.28				0.23
<b>FEMALES</b>						
	Type status	Allotype	Paratype	MEAN	Allotype	Allotype
	Specimen no.	<b>94038</b>	<b>80183</b>		<b>91251</b>	<b>97361</b>
Hind femur		11.64	11.34	11.49	10.70	10.61
Rostrum-subgen. plate		19.50	19.00	19.25	17.58	18.02
Pronotum (midline)		3.38	3.56	3.47	3.29	3.09
Pronotum longest		3.94	3.75	3.85	3.61	3.56
Interocular space		0.17	0.18	0.18	0.16	0.15
Antennal pedicel (width)		0.50	0.45	0.48	0.46	0.49
Antenna		13.33	13.19	13.26	12.40	12.4
T3 tarsus 1 + 2		3.90	3.89	3.90	3.48	3.47
T3 tarsus 3		2.53	2.25	2.39	2.27	2.31
Elytron length		0.81	0.90	0.86	1.32	1.22
<b>Ratios</b>						
Femur/Pronotum		2.95	3.02	2.99	2.96	2.98
Length/Pronotum		4.95	5.07	5.01	4.87	5.06
Interoc./Pronotum		0.04	0.05	0.05	0.04	0.04
Interocular/pedicel		0.34	0.40	0.37	0.35	0.31
Tarsus 3/ 1+2		0.65	0.58	0.61	0.65	0.67
Tarsus 1+2+3/F		4.12	4.09	4.10	3.69	3.69
Tarsus 1+2+3/P		3.52	3.29	3.40	3.23	3.28
Ant/P		3.38	3.52	3.45	3.43	3.48
Elytron/Pronotum		0.24	0.25	0.25	0.40	0.39

\* not completely visible.

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